REMARKS

Claims 21-25 are pending in the application. Claims 1, 2, 6, 7, 8, 11, 12, 13, 16, 17 and 18 were rejected under 35 U.S.C. §102(e), as described on pages 3-6 of the Office Action. Claims 10, 15 and 20 were rejected under 35 U.S.C. §102(a), as described on pages 6-7 of the Office Action. Claims 3, 4, 5, 9 and 19 were rejected under 35 U.S.C. §103(a), as described on pages 8-12 of the Office Action.

Claims 21-25 are independent claims.

The specification has been amended to place the application in correct idiomatic English and to correct minor typographical errors.

Attached hereto are proposed drawing amendments for Figs. 6, 7, 43A-47B and 60, to place the figures in compliance with 37 C.F.R. § 1.84. In particular, the hatched areas in the figures are proposed to be amended such that the hatching does not pass through the lettering. Further, Applicants propose to replace Fig. 60 with Figs. 60A and 60B wherein the flowchart of original Fig. 60 is broken between S66 and S67 and wherein each of the logic flow blocks in Figs. 60A and 60B are enlarged so as to enlarge the font therein. Further, double dash lines will be added to the top of Fig. 60B and the bottom of Fig. 60A to indicate a continuation from Fig. 60A to Fig. 60B. Accordingly, it is respectfully requested that the objection to the drawings be withdrawn.

Furthermore, additionally attached hereto is a proposed drawing amendment for Fig. 69, wherein: "System area" in item 324 is proposed to be replaced with --Special Region--; "Protected Area" in item 325 is proposed to be replaced with --Authentication Region--; "Unprotected Area" in item 326 is proposed to be replaced with --Non-Authentication Region--; "Protected Area" in item 303 is proposed to be replaced with --Authentication Region--; and "Unprotected Area" in item 303 is proposed to be replaced with --Non-Authentication Region-- to respectively correspond with the written description.

It is respectfully submitted that the outstanding rejections to the claims are moot, as the claims have been cancelled. Furthermore, cancellation of claims 1-20 is not an acquiescence that the claims are not patentable over the prior art of record. On the contrary, Applicants reserve the right to pursue the claims in a continuation application.

Applicants respectfully submit that newly added claims 21-25 are patentable over the prior art of record for the following reasons.

One aspect of the present invention is drawn to a **time search map** that is essential for performing specific playback functions such as forward and backward searching.

The intermittent playback is a mode where (i) a playback of data equivalent to 240 milliseconds and (ii) skipping of data equivalent to two seconds, are repeated. When target audio data is encoded using a VBR (variable-bitrate) encoding method such as MPEG2-AAC (Motion Pictures Experts Group 2-Advanced Audio Coding), the size of audio data corresponding to a playback period of two seconds can vary. Consequently, there is a need to somehow specify addresses corresponding to playback positions at intervals of two seconds. One way to specify such addresses includes preparing, in advance, a time search map in which a plurality of entries show playback positions. By referring to the time search map, the recording apparatus can easily specify an address of a playback position to skip audio data equivalent to two seconds and thereby easily perform a forward and backward searching.

However, the size of a time search map is an important factor for suitably performing forward and backward search. Since the time search map shows playback positions located at predetermined intervals, e.g., two seconds, the longer the target audio data is, the greater the number of entries and thus the greater the size of the time search map.

When the time search map is too large, there are several problems. For example, some playback apparatuses may be unable to refer to such a large-sized time search map. To be more specific, in order to play back audio data, a playback apparatus loads a time search map into its internal memory, and the time search map needs to reside in the memory during the playback. The playback apparatus is therefore allowed to allocate most of its computing power to the playback operation.

If the audio data corresponds to a long playback time, the time search map includes a large number of entries and thus is inevitably large in size. Portable playback apparatuses having a small memory may not be able to load such a large time search map into their internal memories. Suppose, for example, when the audio data is a piece of classical music or opera music, one music title is often

longer than one hour. This is likely to be the case where many playback apparatuses fail to load the time search table into their internal memory.

To resolve the above problems, the present invention provides a separate time search map for each of a plurality of audio objects. In addition, each audio object is restricted in terms of playback time to such a size that the number of entries never exceeds a predetermined number. According to the present invention, when a long audio track is recorded onto a semiconductor memory card, the audio track is divided into a plurality of audio objects and then recorded, so that each time search map includes entries not exceeding a predetermined number. Further, attribute information of each audio object shows whether a corresponding audio object is an entire audio track, a first part of an audio track, a middle part of an audio track, or an end part of an audio track.

Since the semiconductor memory card has an exclusive time search map recorded thereon for each one of the audio objects, a playback apparatus loads a time search table corresponding to one audio object to be played back, and keeps the time search map resident in its internal memory during the playback of that audio object. With reference to the time search map resident in the memory, the playback apparatus is allowed to specify an address of a position from which playback after a skip is to be started. When playback of the entire audio object ends, the time search map currently resident in the memory is released, and a time search map corresponding to an audio object to be played back next is newly loaded into the memory.

That is to say, the time search maps are loaded one at a time and released before loading another time search map. By repeating the loading and releasing of time search maps for each of a plurality of audio objects that together form one audio track, a portable playback apparatus with a small memory is allowed to perform intermittent playback of a long track such as a piece of classical music. An object of the present invention lies in eliminating the need for playback apparatuses to have a large memory, by improving a scheme of data storage onto a semiconductor memory card.

Newly added independent claim is drawn to a semiconductor memory card. Newly added independent claim 22 is drawn to a playback apparatus for a semiconductor memory card. Newly added independent claim 23 is drawn to a recording apparatus for recording onto a semiconductor memory card. Newly added independent claim 24 is drawn to a playback method for playing back

data from a semiconductor memory card. Newly added independent claim 25 is drawn to a recording method for recording data onto a semiconductor memory card.

Each of independent claims 21-25 require, *inter alia*, "each piece of management information" to include "**a time search map** and attribute information." Furthermore, each of independent claims 21-25 require each time search map to include "a plurality of pieces of entry information showing **internal positions within a corresponding audio object at predetermined intervals**."

It is respectfully submitted that neither Peterson nor Kihara, either singly or in combination, teaches the above-identified limitations.

The Peterson reference discloses a technique for allowing consumers to access secured data when the consumers have purchased the right to view the secured data. Each consumer may purchase the right through online access from the controller 14 to the authorization center 16 (see FIG. 1). As an alternative to the online payment processing, a storage medium may be utilized. According to Peterson, the secured data is recorded on the storage medium 10 in form of a plurality of contiguous blocks B1, B2, B3, etc., each containing data encrypted by respective keys K1, K2, K3, etc.

Peterson fails to disclose, for each audio object, a time search map including playback positions for use in forward and backward search. Furthermore, there is no disclosure as to how to specify a position from which playback is to be started in forward and backward search. Accordingly, Peterson fails to teach that each piece of management information includes a time search map and attribute information and that each time search map includes a plurality of pieces of entry information showing internal positions within a corresponding audio object at predetermined intervals, as required in each of independent claims 21-25.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed in a prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the foregoing, it is clear that Peterson does not anticipate claims 21-25.

Further, it is respectfully submitted that it would not have been obvious to modify the teachings of Peterson to arrive at the present invention.

In particular, a plurality of audio objects according to the present invention are recorded on a semiconductor memory card. Consequently, one might argue that such a plurality of audio objects is disclosed in the Peterson reference. The present invention may be similar to the Peterson reference in only this respect.

It should be noted, however, the gist of the Peterson reference lies in the authorization processing which enables accesses to secured data upon timed availability. Peterson does not disclose a time search map and therefore does not address a problem with a size of a time search map. Accordingly, one having ordinary skill in the art at the time of the invention would not have been motivated to modify the teachings of Peterson to include a time search map, let alone a time search map for each audio object.

In light of the above discussion, it is respectfully submitted that each of claims 21-25 are additionally patentable over Peterson within the meaning of 35 U.S.C. § 103.

It is respectfully submitted that Kihara fails to teach the shortcomings of Peterson such that a combination of the teachings of Kihara and Peterson would teach that which is required in independent claims 21-25.

Kihara discloses a logical structure referred to as "Part-Track-PBLIST" that facilitates playback (i.e. reproduction) and edit of audio data. In Kihara, valid audio data to be played back is referred to as a "part." A part is one audio frame that is a unit of data successively recorded onto a semiconductor memory card by a recording apparatus through a series of playback start operation and a playback stop operation (sound unit).

An ATRAC3 data file (A3Dnnn.MSA) contains part information PRTINF for managing the connection of parts of a music program. With the use of the PRTINF, when a reproduction sequence of more than one part is determined, a logical unit referred to as a track is defined. Further, a reproduction management file PBLLIST.MSF contains a reproduction sequence management table TRKTBL showing a reproduction sequence of tracks.

One of ordinary skill in the art would learn from Kihara, a technique for defining logical units of playback (tracks) by determining a playback order of valid data. This aspect might arguably be considered similar to attribute information of the present invention. Thus, the present invention might arguably be similar to Kihara with respect to attribute information.

Nevertheless, Kihara fails to disclose recording time search maps for each piece of valid data. Furthermore, there is no description at all to limit the maximum number of entries that can be contained in one time search map by restricting the audio data to a size equivalent to a predetermined playback time or shorter. More importantly, similar to Peterson as discussed above, Kihara fails to teach or suggest that each piece management information includes a time search map and attribute information wherein each time search map includes a plurality of pieces of entry information showing internal positions within a corresponding audio object at predetermined intervals, as required in each of independent claims 21-25.

In light of *Akzo*, it is clear that Kihara does not anticipate claims 21-25.

Because neither Peterson nor Kihara teaches the time search maps as required in each of independent claims 21-25, it is respectfully submitted that the combination of the teachings of Peterson and Kihara additionally fails to teach that which is required in independent claims 21-25.
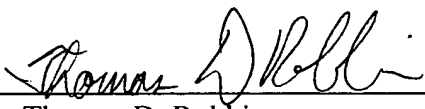
Accordingly, it is respectfully submitted that claims 21-25 are additionally patentable over the combination of Peterson in view of Kihara within the meaning of 35 U.S.C. § 103.

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

Respectfully submitted,

Teruto HIROTA et al.

By: _____
Thomas D. Robbins
Registration No. 43,369
Attorney for Applicants

TDR/jlg
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
March 9, 2004